Met-Enkephalin

Purity: >95% (confirmed by HPLC) I Molecular Formula: C27H35N507S
Molecular Weight: 573.66 g/mol I Sequence: H-Tyr-Gly-Gly-Phe-Met-OH

DESCRIPTION:

In 1975, Met-Enkephalin (ME) was first isolated from porcine brain matter. ME is an endogenous pentapeptide with antagonist activity at the p and 6 opioid receptors. It is one of two forms of enkephalin, the other form being leu-enkephalin. Essentially, this peptide functions as a neurotransmitter or neuromodulator in the central nervous system (CNS). Opioid receptors play a role in numerous physiological processes in the body including pain mediation, opiate dependence, and euphoria. ME acts as a cytokine, a small secreted protein released by cells which have a specific effect on the interactions and communications between cells, and has demonstrated to increase immune functions at low concentration while suppressing at high concentration. In addition, ME behaves as an opioid growth factor (OGF) on many cell types as a receptor that is distinct from the neural opioid receptors.

OGF activates a specific receptor called the opioid growth factor receptor (OGFr or -opioid receptor). The OGF and OGFr axis regulates cell growth in normal and abnormal cells. It has been concluded that ME could potentially be used as a drug to treat cancer and work as a strong immune booster. Modulation of the OFG-OGFr receptor axis represents a promising and therapeutic avenue for effective treatment such as cancer (hepatoblastoma, breast, colon, renal, ovarian, pancreatic, melanoma and many others), autoimmune encephalomyelitis, and multiple sclerosis. Low-dose naltrexone (LDN) actually functions by increasing endogenous levels of enkephalins. As a result, it is postulated that Met-enkephalin can also be used as an alternative to LDN.

PROTOCOL:

Content & Potency: Provided as a 20mg lyophilized vial
Vial reconstitution: 1ml sterile water for injection
Suggested dosage: Inject 10mg (0.5ml or 50units) subcutaneously twice a day 2 days per week

CLINICAL RESEARCH:

Opioid growth factor improves clinical benefit and survival in patients with advanced pancreatic Cancer

Background: Advanced pancreatic cancer carries the poorest prognosis of all gastrointestinal malignancies. Once the tumor has spread beyond the margins of the pancreas, chemotherapy is the major treatment modality offered to patients; however, chemotherapy does not significantly improve survival.
Objective: Opioid growth factor (OGF; [Met5]-enkephalin) is a natural peptide that has been shown to inhibit the growth of pancreatic cancer in cell culture and in nude mice. The purpose of this study was to evaluate the effects of OGF biotherapy on subjects with advanced pancreatic cancer who failed chemotherapy.
Methods: In a prospective phase II open-labeled clinical trial, 24 subjects who failed standard chemotherapy for advanced pancreatic cancer were treated weekly with OGF 250 pg/kg intravenously. Outcomes measured included clinical benefit, tumor response by radiographic imaging, quality of life, and survival.
Results: Clinical benefit response was experienced by 53% of OGF-treated patients compared to historical controls of 23.8% and 4.8% for gemcitabine and 5-fluorouracil 5-FU), respectively. Of the subjects surviving more than eight weeks, 62% showed either a decrease or stabilization in tumor size by computed tomography. The median survival time for OGF-treated patients was three times that of untreated patients (65.5 versus 21 days, p 0.001). No adverse effects on hematologic or chemistry parameters were noted, and quality of life surveys suggested improvement with OGF.

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